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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/501,736	TRACHTMAN ET AL.	
	Examiner	Art Unit	
	OTIS L. THOMPSON, JR	2477	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,14-20 and 23-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,14-20 and 23-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

YesResponse to Arguments

1. Applicant's arguments filed August 28, 2009 with respect to claims 1 and 7 have been fully considered but they are not persuasive. Applicant contends that Golitschek et al. (WO 02/058314 A1) does not teach the action of ***indicating*** as recited in claims 1 and 7, but rather teaches that the coding rate of blocks subsequent to the first block are set to coding rates ***derivable from*** the coding rate of the first block. In short, Applicant contends that ***derivable from*** and ***indicating*** have different meanings, and thus Golitschek et al. does not teach ***indicating*** as recited in claims 1 and 7. However, ***indicating*** is a broad term and can easily be construed to mean ***derivable from***.

In Applicant's claims, data in the first block is used to indicate the coding rate of a subsequent one or more blocks. However, the claims do not recite whether data used in the first block is the actual coding rate of the subsequent one or more blocks. In Golitschek et al., the very presence of the coding rate in the first block indicates the coding rate of the subsequent one or more blocks because the coding rate of the subsequent blocks is obtained from the coding rate of the first block. While a calculation may have to be performed to obtain the actual coding rate for the subsequent, that calculation is still performed using data (i.e. the coding rate) of the first block. Hence, the derivation technique in Golitschek et al. using the coding rate of the first block can be easily construed as ***indicating***.

2. Applicant's arguments filed August 28, 2009 with respect to claims 14-20 and 23-31 have been fully considered but they are not persuasive. Applicant contends that neither Thomas (US 6,697,642 B1), Mantha (WO 01/91407 A1), Siemens (EP 1179897 A2), nor Vistar (WO 99/49592) teaches the distinguishing features of claim 1. However, as shown above, Golitschek

et al. teaches the features of claim 1. Hence, rejection of claims 14-20 and 23-31 over the aforementioned applied references is maintained.

3. Applicant's arguments filed August 28, 2009 with respect to claim 26 have been fully considered but they are not persuasive. Applicant contends that Mantha does not teach ***determining the least capable of the receivers*** and ***selecting one or more parameters of the transmission so as to match the capabilities of the least capable of the receivers***. Applicant further notes that in Mantha, each station reports only its ***reception quality***, rather than its capability, and that packets are packaged for the worst ***reception quality*** to increase the probability that subscriber stations will be able to receive the packets.

Examiner respectfully disagrees with Applicant's contention that Mantha does not teach ***determining the least capable of the receivers*** and ***selecting one or more parameters of the transmission so as to match the capabilities of the least capable of the receivers***. Applicant correctly notes that in Mantha, each station reports it reception quality and that packets are packaged for the worst reception quality. However, Applicant is incorrect in the contention that reception quality and capability of each station are different. Reception quality is a direct reflection of the capability of each station's ability to receive packets. As noted by Applicant, Mantha, page 7 lines 4-16, teaches frame error rate as reception quality. Hence, a station's capability can clearly be construed to mean "its ability to receive packets without error" possibly because of it's distance from the transmitting station.

In view Examiner's forgoing argument, Mantha's teaching of packaging packets for the worst reception quality, a particular station having the worst reception quality, can clearly be construed as ***selecting one or more parameters of the transmission so as to match the***

capabilities of the least capable of the receivers, the one or more parameters being the worst reception quality reported by one of the stations.

Accordingly, the current rejection is maintained and is updated to reflect claim amendments.

DETAILED ACTION

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (EP 1 130 837 A2), in view of Golitschek et al. (WO 02/058314 A1).

6. **Regarding claim 1,** Chen et al. discloses *a method of transmitting a plurality of forward error corrected blocks within a burst, comprising:*

a. *Including, using a computing device, a header in the burst indicating the coding rate of one of the blocks* (Abstract, see "…examine the header to (203) to determine a particular coding scheme [i.e. coding rate]…associated with the payload [i.e. includes one of the blocks]..."; Paragraph 0022, see "...payload 205 includes...multiple control or data fragments (303)...the fragments 303 vary in number (e.g., 1, 2, 4 or 9) per block based upon the selected modulation and coding schemes...").

Chen et al. does not disclose *varying, using the computing device, the forward error-correction coding rate among the forward error corrected blocks; and indicating, using the computing device, the coding rate of a subsequent one or more of the blocks using data contained in said one of the blocks.*

However, Golitschek et al. discloses a transmission system having a preferred embodiment in which *the forward error-correction coding rate among the forward error corrected blocks are varied* (Page 12 lines 22-25, see "…first code word is adapted the code rate (or FEC parameter) of the following code words can be fixed to a higher coding rate..."), and the code rate (FEC parameter) of subsequent code blocks are explicitly derived from the coding rate of the first code block (Page 12 lines 22-29) (i.e. *indicating, using the computing device, the coding rate of a subsequent one or more of the blocks using data contained in said one of the blocks*). As stated by Golitschek et al., this reduces the signaling overhead because the receiver can derive the coding rates of subsequent code blocks from the coding rates of the first code block (Page 12 lines 27-29). In combination with Chen et al., Golitschek et al. would allow a block in the payload of the burst in Chen et al. to indicate coding rates for subsequent blocks in the payload.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate derivation of coding rates for subsequent code blocks from the coding rates of the first code block of Golitschek et al. into CHEN ET AL. in order to reduce signaling overhead.

7. **Regarding claim 2,** Chen et al. in view of Golitschek et al. discloses *wherein said one of the blocks is a first one of the blocks to be transmitted* (Golitschek et al., Page 12 lines 22-29, see

"...receiver can derive the coding rates of subsequent code blocks from the coding rates of the first code block [i.e. first one of the blocks]...").

8. **Regarding claim 3,** Chen et al. in view of Golitschek et al. discloses *wherein said header comprises a variable unique word* (Chen et al. , Figure 2 Unique Word 201).

9. **Regarding claim 4,** Chen et al. in view of Golitschek et al. discloses *wherein the blocks contain packets addressed to a plurality of receivers* (Golitschek et al., Page 4 lines 8-11, see "…PDU's are encoded differently in the physical layer to increase coding gain…These different portions of the overall code blocks…", i.e. A code block contains a packet [PDU]; Chen et al., Abstract, see "…protocol can be applied to…a satellite communication system (100) with multiple satellite terminals (103, 105)…").

10. **Regarding claim 5,** Chen et al. in view of Golitschek et al. discloses *wherein at lest some of the packets are split between different ones of the blocks* (Golitschek et al., Page 3 lines 25-29, see "...PDU that needs to be retransmitted...is combined with some incremental redundancy bits provided by the transmitter…").

11. **Regarding claim 6,** Chen et al. in view of Golitschek et al. discloses *wherein the coding rate indicated in the header is less than or equal to the coding rate of the subsequent one or more blocks* (Golitschek et al., Page 12 lines 22-25, see "…first code word is adapted the code rate (or FEC parameter) of the following code words can be fixed to a higher coding rate...").

12. **Regarding claim 7,** Chen et al. discloses *a method, comprising:*

b. *Transmitting, using a computing device, a data burst utilizing a unique word and a plurality of blocks, wherein the unique word is variable and indicates the transmission scheme of at least one block* (Abstract, see "…examine the header to (203) to determine a

particular coding scheme [i.e. coding rate]…associated with the payload [i.e. includes one of the blocks]..."; Paragraph 0022, see "...payload 205 includes...multiple control or data fragments (303)...the fragments 303 [i.e. plurality of blocks] vary in number (e.g., 1, 2, 4 or 9) per block based upon the selected modulation and coding schemes..."; Figure 2 Unique Word 201).

Chen et al. does not disclose *a plurality of blocks and said at least one block indicates the transmission scheme of at least one other of said blocks.*

However, Golitschek et al. discloses a transmission system having a preferred embodiment in which the code rate (FEC parameter) of subsequent code blocks [i.e. *plurality of blocks*] are explicitly derived from the coding rate of the first code block (Page 12 lines 22-29) (i.e. *at least one block indicates the transmission scheme of at least one other of said blocks*). As stated by Golitschek et al., this reduces the signaling overhead because the receiver can derive the coding rates of subsequent code blocks from the coding rates of the first code block (Page 12 lines 27-29). In combination with Chen et al., Golitschek et al. would allow a block in the payload of the burst in Chen et al. to indicate coding rates for subsequent blocks in the payload.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate derivation of coding rates for subsequent code blocks from the coding rates of the first code block of Golitschek et al. into Chen et al. in order to reduce signaling overhead.

13. Claims 14 -20 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Golitschek et al., as applied to claim 1 above, and further in view of Thomas (US 6,697,642 B1).

14. **Regarding claims 14,** Chen et al. in view of Golitschek et al. discloses the claimed invention above but fails to specifically disclose the limitations of claim 14.

However, Thomas discloses *a method of transmission over a satellite link between a satellite station and a mobile satellite terminal* (Column 1 lines 43-44, see "…communications between a cellular radio telephone base station [i.e. satellite terminal] and a mobile station [i.e. mobile satellite terminal]…") *able to transmit at a selected one of a plurality of different forward error correction (FEC) coding rates* (Column 1 lines 48-50, see "…switch the coding rate for transmissions…", i.e. implies plurality of different coding rates) *wherein a change between successive ones of said FEC coding rates provides a substantially constant change in gain over the satellite link* (It is well known in the art that the FEC coding rates directly impacts the gain in this type of transmission system because of signal quality and strength). Thomas further discloses that based on the measured signal quality, the base station can send an instruction to a mobile station to switch the coding rate for transmission therefrom (Column 1, lines 47-50). This disclosure means that at an initial coding rate, the mobile station transmits a signal to the base station (Column 1 lines 45-46, see "…monitoring the signal received at the respective base station…"), the base station sends an instruction to the mobile station to switch coding rates for subsequent transmission from the mobile station, and the mobile station transmits another signal with a switched coding rate (i.e. *at the terminal, transmitting a plurality of bursts* [plurality of bursts are constituted by signals before and after coding rate change], *wherein the FEC coding*

rates of the burst vary between at least some of said bursts [switched coding rate indicates varying of FEC coding rates between bursts] *in response to a signal from the satellite station* [based station instruction to switch coding rates]). Obviously, if the signal quality is low, then the instruction to switch the coding rate will cause the mobile station to transmit at a coding rate that improves the signal quality.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate this teaching of Thomas into the system of Chen et al. in view of Golitschek et al. in order to improve signal quality of subsequent transmission from satellite terminal to a satellite station.

15. **Regarding claim 15,** Chen et al. in view of Golitschek et al. in view of Thomas discloses that *said signal is dependent on a reception quality of one or more of said bursts previously received from the mobile satellite terminal by the satellite station* (Thomas, Column 1 lines 47-50, see "…based on measure signal quality, the base station can send an instruction [i.e. signal]…"; Column 1 lines 45-46, see "…monitoring the signal received at the respective base station…", i.e. signal previously received from the mobile satellite terminal).

16. **Regarding claim 16,** Chen et al. in view of Golitschek et al. in view of Thomas discloses that *the mobile satellite terminal selects the FEC coding rates of at least one of said bursts dependent on a reception quality of one or more transmissions transmitted from the satellite station to the mobile satellite terminal if said signal is not received from the satellite station within a timeout period* (Thomas, Column 2 lines 46-56, see "...determining a period of inactivity [i.e. timeout period for receiving signal]...determining signal quality of a signal received during said period [i.e. reception quality of one or more transmissions from the satellite station...coding

means operable at two or more coding rates and responsive to a determined signal quality to switch between coding rates [i.e. select coding rate of one of said bursts dependent upon reception quality from satellite station to terminal]...").

17. **Regarding claim 17,** Chen et al. in view of Golitschek et al. discloses the claimed invention above but fails to specifically disclose the limitations of claim 17.

However, Thomas discloses *a method of transmission over a satellite link between a satellite station and a mobile satellite terminal* (Column 1 lines 43-44, see "...communications between a cellular radio telephone base station [i.e. satellite terminal] and a mobile station [i.e. mobile satellite terminal]...") *able to transmit at a selected one of a plurality of different forward error correction (FEC) coding rates* (Column 1 lines 48-50, see "...switch the coding rate for transmissions...", i.e. implies plurality of different coding rates) *wherein a change between successive ones of said FEC coding rates provides a substantially constant change in gain over the satellite link* (It is well known in the art that the FEC coding rates directly impacts the gain in this type of transmission system because of signal quality and strength). Thomas further discloses that based on the measured signal quality (i.e. *determining a reception quality of the first burst*), the base station can send an instruction to a mobile station to switch the coding rate for transmission therefrom (i.e. *transmitting a command to the mobile satellite terminal to select a different one of the FEC rates for transmission of a second subsequent burst*) (Column 1, lines 47-50). This disclosure means that at an initial coding rate, the mobile station transmits a signal to the base station (Column 1 lines 45-46, see "...monitoring the signal received at the respective base station...", i.e. *at the satellite station, receiving a first burst from the mobile satellite terminal*), the base station sends an instruction to the mobile station to switch coding rates for

subsequent transmission from the mobile station (i.e. once the signal quality is measured, instruction is sent *if the reception quality does not meet a predetermined criterion*), and the mobile station transmits another signal with a switched coding rate (i.e. *second transmission is received with a reception quality which meets the predetermined criterion*). Obviously, if the signal quality is low, then the instruction to switch the coding rate will cause the mobile station to transmit at a coding rate that improves the signal quality.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate this teaching of Thomas into the system of Chen et al. in view of Golitschek et al. in order to improve signal quality of subsequent transmission from satellite terminal to a satellite station.

18. **Regarding claims 18 and 23,** Chen et al. in view of Golitschek et al. in view of Thomas does not specifically disclose that *said substantially constant change in gain is approximately 1 dB,* however, it is well known in the art that change in gain between a satellite station and a terminal can be constant at 1dB.

19. **Regarding claims 19 and 24,** Chen et al. in view of Golitschek et al. in view of Thomas discloses that *the satellite station is a satellite ground station for communicating with the satellite terminal via a satellite* (Chen et al., Figure 1 Base 101 is satellite ground station communicating with satellite terminals ST 103 and 105 via satellite 107).

20. **Regarding claims 20 and 25,** Chen et al. in view of Golitschek et al. in view of discloses that *said satellite station is a satellite* (Chen et al., Figure 1 label 107 is the satellite).

21. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Golitschek et al. as applied to claim 1 above, and further in view of Mantha (WO 01/91407 A1).

22. **Regarding claim 26,** Chen et al. in view of Golitschek et al. discloses the claimed invention above but fails to specifically discloses *wherein the transmission is from a transmitter to a plurality of receivers, and the transmission includes a plurality of packets addressed respectively to the receivers, further comprising: determining the least capable of the receivers; and selecting one or more parameters of the transmission so as to match the capabilities of the least capable of the receivers.*

However, Mantha discloses a system comprising a transmitter and one or more of a plurality of receivers (i.e. *from a transmitter to a plurality of receivers*) (See Abstract), wherein the *transmission includes a plurality of packets addressed respectively to the receivers* (Page 10 4th paragraph, see "...Payloads 108 can be specifically addressed to a particular subscriber stations 28a, 28b... or 28n..."). Mantha also discloses *determining the least capable of the receivers* (Page 10 1st paragraph, see "...each subscriber station 28 reports its reception quality to base station 24..."; 3rd paragraph, see "…header 104 is always packaged into block B in a robust manner to provide a relatively high level of confidence of recovery by all subscriber stations..."; 4th paragraph, see "…broadcast packets can be packaged for the worst reception quality expected for all of the intended receivers…"; i.e. The worst reception quality constitutes *a least capable receiver* since each receiver reports its reception quality to the transmitter. Thus, the transmitter knows the worst reception quality [i.e. *least capable receiver*], and packages the transmission accordingly). Mantha further discloses *selecting one or more parameters of the*

transmission so as to match the capabilities of the least capable of the receivers (Page 10 3rd paragraph, see "...header 104 is always packaged into block B in a robust manner to provide a relatively high level of confidence of recovery by all subscriber stations..."; 4th paragraph, see "...broadcast packets can be packaged for the worst reception quality expected for all of the intended receivers...", i.e. The packaging constitutes *selecting one or more parameters to match the capabilities of the least capable of the receivers* because the packaging is actually FEC coding [Page 7 1st paragraph]). As stated previously, this robust packaging based on receivers' reception quality provides a high level of confidence that a transmission to the receivers will be able to be recovered by all of the receivers (Page 10 3rd paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Mantha into the system of Chen et al. in view of Golitschek et al. in order to allow a transmission to be transmitted based on the reception qualities of a plurality of receivers, such that the transmission will be able to be recovered by all of the receivers.

23. **Regarding claim 27,** Chen et al. in view of Golitschek et al. in view of Mantha discloses *wherein the transmission includes a forward error-corrected block having a coding rate selected to match the capabilities of the least capable of the receivers* (Mantha, Page 7 1st paragraph, see "...header 104 is packaged in a robust manner to increase probability...header 104 comprises...coding the information bits for forward error correction (FEC)...").

24. **Regarding claim 28,** Chen et al. in view of Golitschek et al. in view of Mantha discloses *wherein the transmission is from a transmitter to a plurality of receivers* (Mantha, Abstract, see "...from a transmitter to one or more of a plurality of receivers..."), *and wherein at least one of*

the blocks includes part or all of a plurality of packets addressed to different ones of said plurality of receivers (Mantha, Figures 4a-4c show frames containing multiple blocks and Figure 5 shows the structure of a single block within the fame; Page 10 4th paragraph, see "...Payloads 108 can be specifically addressed to a particular subscriber stations 28a, 28b... or 28n...") *and has a coding rate selected so as to match the capabilities of the least capable of the receivers to which the packets are addressed* (Page 10 3rd paragraph, see "…header 104 is always packaged into block B in a robust manner to provide a relatively high level of confidence of recovery by all subscriber stations..."; 4th paragraph, see "…broadcast packets can be packaged for the worst reception quality expected for all of the intended receivers…", i.e. The packaging constitutes *selecting the coding rate to match the capabilities of the least capable of the receivers* because the packaging is actually FEC coding [Page 7 1st paragraph]).

25. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Golitschek et al. in view of Mantha as applied to claim 28 above, and further in view of Siemens (EP 1 179 897 A2).

26. **Regarding claim 29,** Chen et al. in view of Golitschek et al. in view of Mantha discloses the claimed invention above but fails to specifically disclose *wherein at least some of the packets are split between different forward error-corrected blocks*. However, Siemens discloses a protection method which uses interlacing for FEC blocks and data frames. Siemens specifically discloses two frames (T1 and T2) being transmitted one after the other on a channel. The frame T1 contains a table relevant to frame T2, and in this table the information M1, M2, etc. appear and is protected with an FEC code (See Paragraph 0040 and Figure 1). From figure 1, it is

shown that *the packets* (T1 and T2) *are split between different forward-error corrected blocks* (TAB_T2 which is a FEC block relevant to packet T2). This interlacing performed in this protection method is used to give a decoder a proper amount of time to decode the error correction code (Paragraph 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Siemens into the system of Chen et al. in view of Golitschek et al. in view of Mantha in order to give the decoder ample time to decode the error correction code.

27. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Golitschek et al. as applied to claim 1 above, and further in view of Vistar (WO 99/49592).

28. **Regarding claim 30,** Chen et al. in view of Golitschek et al. discloses the claimed invention about but fails to disclose the features of Applicant's claim 30.

However, Vistar discloses a communication system which *assigns a plurality of packets addressed to a respective plurality of wireless receivers to a plurality of wireless bearers* (See Figure 1 for MSAT 12 communicating with Mobile Terminals 11 [i.e. plurality of receivers] via the carriers 17 [i.e. plurality of bearers]; Page 6 lines 21-25, see "…addresses the packets to the appropriate terminal..."); *identifies the receiving capabilities of the wireless receivers* (Page 7 lines 4-10, see "…carriers have different channel rates…to support terminals with different antenna characteristics, such as gain, size, etc…"; i.e. This constitutes *identifying the receiving capabilities* because a terminal is matched to channel, not solely based on the channel rate, but

also based on the characteristics of antennas of the terminals [i.e. *receivers*]. Furthermore, the antennas directly affect the receiving capability of the terminals); *and assigning packets addressed to ones of the receivers having similar receiving capabilities onto the same one of said bearers* (Page 7 lines 4-10, see "...carriers have different channel rates...to support terminals with different antenna characteristics, such as gain, size, etc..."; Page 6 lines 25-30, see "...incoming data packets are buffered and then mixed with one or more digital subcarriers [i.e. *assigning packets addressed to ones of the receivers having similar receiving capabilities onto the same one of said bearers*], depending on the data rate..."; i.e. As stated previously stated a channel/subcarrier is matched to a terminal based on not only the channel rate but also based on the characteristics of the antenna of the terminal [i.e. receiving capabilities]. Since this is true, it is obvious that when packets are mixed with one or more digital subcarriers based on data rate/channel rate, the packets are also being assigned to a subcarrier/channel based on the characteristics of the antenna of the receiving terminal. Vistar further states that channel assignments are carried to the remote terminals via a control channel [Page 6 lines 28-30]). As previously stated, this method allows the system to support terminals that have different receiving capabilities (different antenna characteristics, Page 7 lines 4-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Vistar into the system of Chen et al. in view of Golitschek et al. in order to support terminals that have different receiving capabilities.

29. **Regarding claim 31,** Chen et al. in view of Golitschek et al. in view of Vistar discloses *a method of assigning a plurality of receivers to a plurality of bearers for reception of packet*

addressed to the receivers (Vistar, See Figure 1 for MSAT 12 communicating with Mobile Terminals 11 [i.e. plurality of receivers] via the carriers 17 [i.e. plurality of bearers]; Page 6 lines 21-25, see "…addresses the packets to the appropriate terminal..."); *in a first, low traffic condition, assigning packets to a smaller number of bearers containing packets addressed to receivers of differing receiving capabilities* (Vistar, Page 7 lines 6--8, see "...packets arrive...at a very low bit rate...send them out on a single carrier [i.e. bearer]...", i.e. smaller number of bearers for low traffic condition); *and in a second, high traffic condition, assigning packets to a greater number of bearers* (Vistar, Page 7 lines 8-9, see "...rate is too great for a single carrier...distributed across one or more channels...", i.e. greater number of bearers for high traffic condition) *and assigning packets addressed to those of the receivers having similar receiving capabilities onto the same one of said greater number of bearers* (Page 6 lines 25-27, see "…incoming data packets are buffered and them mixed with one or more digital subcarriers [i.e. bearers] depending on data rate..." i.e. assigning packets addressed to those of the receivers having similar receiving capabilities onto the same one of said greater number of bearers; Page 7 lines 4-6, see "…carriers can have different channel rates...at different power levels to support terminals with different antenna characteristics...").

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OTIS L. THOMPSON, JR whose telephone number is (571)270-1953. The examiner can normally be reached on Monday to Thursday 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on (571)272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Otis L Thompson, Jr./
Examiner, Art Unit 2477

November 25, 2009

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2477